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Affective Influences on Creativity in Teams: A Multilevel and Regulatory Focus Perspective

Knowing how to enhance and to sustain creativity is a challenge for project leaders and team supervisors, and teams often fail to realize their creative potential (George, 2007; Zhou & Hoever, 2014). We know that mood affects creativity by at least two routes at the individual level (De Dreu, Baas & Nijstad, 2008; Nijstad, De Dreu, Rietzschel, & Baas, 2010). Less studied are the effects of affect, both mood and especially emotions, on creativity at the collective levels of dyads and teams. Recent research suggests that affect can fuel or derail creative processes operating across levels in teams (see To, Tse, & Ashkanasy, 2015 for a review; George & Zhou, 2007; Van Kleef, Anastasopoulou & Nijstad 2010). Creative striving is often emotionally laden and the effects of affect may be compounded or more complex in teams than at the individual level (Amabile, Barsade, Mueller & Staw, 2005). The uneven and iterative nature of creative processes in teams is likely to produce both emotional highs and lows. Team members may feel excited if they produce new insights, but they may also become stymied and feel anxious, frustrated, or discouraged. When interacting with other team members, interpersonal emotions such as anger are also possible. Further, dyad or team members may experience different emotions than their interaction partners at the same point in time – potentiating either more varied cognitive styles that enhance creativity, or unproductive conflict which undermines creativity. Further, the effects of emotions on creativity may depend on stage in the creative process and the cognitive style(s) that best support that stage. To understand the complicated affect-creative process relationships, an integrated perspective that "considers the forces operating at multiple levels within a work team" is both theoretically and practically important (To, Tse et al., 2015, pp. 544).

In this chapter, we propose that conceiving affect in terms of the emotions associated with regulatory focus can help to explain the complicated effects of affect on creativity across the person, dyad, and team levels. Our chapter is organized as follows. First, we review past research findings and theorizing on affect-creativity relationships at each of the three levels. Then, we draw on Higgins' (2000) *Regulatory Focus Theory* to explain why and how the combined experiences of promotion-focused and prevention-focused emotions may influence creativity across levels at different stages of the creative process.

Definitions of Affect and Creativity at Multiple Levels

Affect is a generic term that includes both short-lived specific and possibly intense emotions as well as longer-lasting but less targeted or intense moods (e.g., Barsade & Gibson, 2012; Fisher & Ashkanasy, 2000; Weiss, & Cropanzano, 1996). Affective states are typically described by two dimensions: *valence* and *activation* (Russell & Barrett, 1999; Watson, Clark, & Tellegen, 1988). Valence or hedonic tone is the subjective experience of pleasantness/unpleasantness. Activation refers to a sense of mobilization and one's physiological state in terms of its level of arousal or energy (Seo, Barrett, & Bartunek, 2004). Activating and positively valent feelings include, for example, 'excited' and 'enthusiastic,' while deactivating and positively valent feelings include 'calm' and 'relaxed.' Activating and negatively valent feelings include 'anxious' and 'angry,' while deactivating and negatively valent feelings include 'discouraged' and 'bored.'

Ashkanasy (2003) identified five levels of conceptualization in affect research relevant to organizations: (1) within-person, (2) between-persons, (3) dyadic/interpersonal, (4) group, and (5) organization-wide. The within-person level is the foundation of the model, focusing on event-based or momentary fluctuations in affective states (Weiss & Cropanzano, 1996). The between-persons level represents more stable individual differences in affective

experience and attitude, including, for example, trait affectivity (Watson & Tellegen, 1985). The interpersonal or dyadic level focuses on affect in interpersonal interactions; for example, how one person's expressed feelings may influence the response of an observer or a target – the person to whom the emotions are directed (Van Kleef, 2014). The group level focuses on affect as a collective experience shared by group members, including group affective tone in particular (George, 1990). Level 5 (organization-wide) deals with the organization as a whole, such as the shared emotional climate of an organization.

Following the recent review by To, Tse et al. (2015), we adopt the process-based view of creativity to address the multilevel nature of creativity in work teams. In particular, creativity refers to the process by which individuals generate ideas or solutions that are both novel and useful for ongoing problem solving and/or improvement (Amabile, 1988; 1996; George, 2007; Zhou & Hoever, 2014). Ideas are considered novel if they are unique relative to ideas currently available; useful ideas must have potential for direct or indirect value to a person, dyad, team, and/or organisation, in either the short or long term (Shalley, Zhou, & Oldham, 2004).

The creative process at the within-person level includes activities that vary over the course of seeking a creative solution, such as problem identification and definition, information collection and encoding, idea generation, and verification or evaluation of ideas (Amabile, 1996; Lubart, 2001). There are a number of models of the stages of the creative process. In this paper we adopt a streamlined three stage model: Problem recognition and definition, creative idea generation, and idea evaluation/verification. This multi-stage creative process may also be undertaken in company, with two or more individuals working together to define a problem, exchange unique information, create and extend possible solutions, and evaluate alternatives (Hargadon & Bechky, 2006; To, Tse et al., 2015). Creative processes may also occur when a larger group or team comes together to exchange

information and ideas, generate new ideas, and evaluate alternative solutions (To, Tse et al., 2015). While these creative processes may not produce immediate outcomes, they supply the information, ideas, and insights needed for the eventual implementation of creative solutions (Nijstad, De Dreu, Rietzschel, & Baas, 2010). This process-based view recognizes the importance of understanding the manner in which creative outputs ultimately emerge, providing levers for the improvement of creative outcomes (Mumford, 2000).

Researchers identify two general types of thinking that can be differentially beneficial at different stages of the creative process (Allen & Thomas, 2011; De Dreu, Baas et al., 2008; Lubart, 2001). The first type of thinking is automatic, fast, and associative, and is likely to be especially useful in the idea generation stage of the creative process. The second type of thinking is effortful, logical, and systematic. It may be more useful in the early stage of problem recognition and definition as well as the later stages of idea evaluation and verification. However, both types of thinking may be at least somewhat useful at all stages rather than at one exclusively (Allen & Thomas, 2011).

The literature suggests that affect can influence creativity in several ways. As will be explained further below, some of the effects of affect on creativity may occur because affect primes the two thinking styles described above. Below we review the past research on affect-creativity links at three levels of conceptualization: individual, dyad, and group. We first address the findings and concepts at the individual level, which lays a foundation for understanding the affect-creativity nexus at higher levels.

Review of the Affect–Creativity Relationship at Multiple Levels

Individual level

People do not always perform at their creative best, and mood states are recognized as momentary factors that may account for variation in individual creativity. Experience sampling research indicates that both affect and creativity fluctuate substantially within

person over short periods of time (e.g., Binnewies & Wornlein, 2011; Bledow, Rosing, & Frese, 2013; Fisher, Minbashian, Beckmann & Wood, 2013; To, Fisher, Ashkanasy & Rowe, 2012). Research has shown that positive affective states often foster individual creativity (for reviews, see Baas, De Dreu, & Nijstad, 2008; To, Tse et al., 2015). This view is primarily rooted in Isen's laboratory work (Isen, 1999; Isen, Daubman, & Nowicki, 1987) showing that induced positive moods provide transient resources such as cognitive flexibility which enable more divergent thinking and thus creative ideas. Consistent with this view, the "broaden-and-build" theory (Fredrickson, 1998; 2001) holds that pleasant feelings evoke optimistic appraisals and serve to broaden thought-action repertoires, encouraging people to try out new and unusual ideas and behaviors. In this view, negative moods should not facilitate creativity as they reduce cognitive flexibility and stimulate pessimistic judgements about the likelihood of success (Seo et al., 2004).

However, cognitive flexibility may not be the only route to creativity, and there is research evidence demonstrating that negative moods may also increase creativity (e.g., see George & Zhou, 2002; 2007; Kaufmann, 2003). This may occur because negative moods signal that current efforts to solve an ongoing problem are inadequate, which then motivates greater effort and persistence in the search for better alternatives and higher-quality solutions (George & Zhou, 2002; Kaufmann, 2003). Positive moods interpreted as a signal that adequate progress has already been made may lead people to cease creative efforts sooner and accept a less creative solution (Johnson & Tversky, 1983; Kavanagh & Bower, 1985; Martin & Stoner, 1996).

These contradictory perspectives have led scholars such as De Dreu,Baas et al. (2008) and George and Zhou (2007) to put forward dual process accounts to explain how both positive and negative moods may facilitate creativity. Specifically, grounded in Schwarz and Clore's (2003) *Mood-as-Information Theory*, the *dual tuning* perspective by George and

Zhou (2007) suggests that positive and negative feelings play different roles in tuning the cognitive processes producing creativity. Signaling an unproblematic status quo, positive moods facilitate creativity by prompting looser information processing, greater use of integrative strategies, and more playful, divergent thinking (George & Zhou, 2007; Schwarz & Clore, 2003). The problematic signals flowing from negative moods may alert individuals to shortfalls in their problem-solving, thereby producing more effortful, analytical, and systematic thinking and reducing reliance on preexisting mental scripts or assumptions (George & Zhou, 2007; Martin & Stoner, 1996; Schwarz & Clore, 2003).

Similarly, De Dreu, Baas et al. (2008) and Nijstad et al. (2010) suggest that creativity can be achieved via dual pathways: (1) enhanced cognitive flexibility enabled by positive moods or (2) increased persistence stimulated by negative mood. The dual pathway perspective suggests that mood valence must be considered in concert with the other core mood dimension – activation– in order to explain effects on creativity. Specifically, moods must be high arousal or activating if they are to supply the cognitive energy to foster creativity by either the flexibility route (in the case of positive moods) or the persistence route (in the case of negative moods; De Dreu , Baas et al., 2008; Nijstad et al., 2010). Flexibility leads to richer and more original ideas because it prompts access to remote knowledge, widens categorization, and allows new connections among unrelated pieces of information to be noticed (De Dreu , Baas et al., 2008; Friedman & Förster, 2010; Nijstad et al., 2010). Alternatively, creativity can be achieved through prolonged effort toward deeper problem probing, in depth survey within a few categories or perspectives, and focused and critical exploration of alternative solutions (De Dreu, Baas et al., 2008; Nijstad et al., 2010). A series of laboratory studies offers support for the valence by activation predictions of the dual pathway model (De Dreu, Baas et al., 2008; Nijstad et al., 2010). Two meta-analyses by

Baas et al. (2008) and Davis (2009) have been conducted to investigate the inconsistent relationships between mood and creativity. Overall, the findings suggest a pervasive role of activating positive moods in facilitating creativity. Beneficial effects of negative activating moods (like fear and anxiety) on creativity sometimes do exist, though they are more context-specific (Baas et al., 2008; Davis, 2009).

To explore the mood-creativity nexus in the field, several experience sampling studies have traced individuals' moods and creativity over weeks or months in natural settings (Amabile, Barsade, Mueller & Staw, 2005; Binnewies & Wörnlein, 2011). For example, To et al. (2012) found evidence that momentary activating moods of both valences promoted concurrent engagement in creative processes within-person among individuals working on a demanding long-term project. Conversely, deactivating positive and negative moods were negatively related to creative process engagement (To et al., 2012). A subsequent experience sampling study by To and colleagues (To, Fisher, & Ashkanasy, 2015) again demonstrated positive main effects of activating positive mood on creativity, while finding that the effect of activating negative mood on creativity was positive only for those high on both trait learning goal orientation (a self-regulatory propensity to pursue the development of competence) and psychological empowerment (experiences of meaning, competence, self-determination, and impact at work). Binnewies and Wörnlein (2011) found that contextual factors such as job control moderated the effects of activating negative mood on creativity.

Following the dual process accounts, it appears that higher arousal positive and negative moods may play complementary rather than opposing roles in facilitating individual creative processes. However, experiencing both positive and negative moods at the same time is unlikely; thus individual employees can only benefit from positive and negative moods and the creative resources each brings sequentially over time. In this regard, recent experience

sampling research by Bledow and colleagues (Bledow, Schmitt, Frese, & Kuehnel, 2011; Bledow et al., 2013) demonstrates that experiencing affective shift or an improvement in mood over a day is associated with greater individual creativity that day. Activating negative moods early in the day can have a beneficial effect by drawing attention to goal discrepancies and the need for corrective action. An initial negative mood is more helpful for engagement and creativity if an activating positive mood subsequently occurs later in the day and provides the energy and flexible thinking to follow through (Bledow et al., 2011; 2013). In this view, a daily temporal shift from a negative to a positive activating mood, not the other way around, should foster creativity.

An emerging consensus from the individual level research suggests that experiencing moods of both valences over time (especially those with higher activation levels) can facilitate creativity through both flexible and systematic processing. However, Baas et al. (2008) concluded from their meta-analysis that, "there is more to the mood-creativity relationship than hedonic tone [valence], and activation, or their interaction" (pp. 797). To untangle the complexity may require consideration of other affective dimensions (such as those of regulatory focus; Higgins, 2000) and their specific cognitive and motivational implications (Baas et al., 2008). Also, while the extant affect-creativity research has focused on the creativity of individuals working alone, scholars are beginning to investigate how the phenomenon may go beyond 'a person' and take place interpersonally (see Barsade & Knight, 2015; van Kleef, 2014 for reviews). This shift of focus is important as both affect and creativity are often embedded in the interpersonal dynamics of dyads and teams (Hennessey & Amabile, 2010; George 2007). Below we review the recent research at these levels, and finally propose that conceiving affective states and their effects in terms of regulatory focus may help to better explain these multilevel phenomenon.

Dyadic Level

When attempting to be creative, individuals may not only work alone but also engage in social exchanges with co-workers to obtain information, feedback, and suggestions as ideas are generated, refined, and evaluated (Hargadon & Bechky, 2006; Hennessey & Amabile, 2010). Van Kleef, Anastasopoulou and Nijstad's (2010) account *of Emotions as Social Information* (EASI) offers a theoretical basis to explain how expressed emotions may influence creativity at the dyadic level (for reviews, see Van Kleef 2014; Van Kleef, De Dreu, & Manstead, 2010). EASI suggests that there are two processes through which emotions may inform the behavior of interaction partners. First, via *affective reaction*, observers of others' emotional expressions may 'catch' the expressed emotions and experience the same feelings (Van Kleef et al., 2010). Alternatively, instead of direct contagion or mirroring, an observer may instead engage in *inferential processing*, in which they process the other party's emotional cues more deeply and distil functional messages from the expressions (Forgas, 2002; Van Kleef et al., 2010).

Applying these concepts, the effects of displays of positive or negative social emotions on creativity at the dyadic level may depend on whether affective reaction or inferential processing takes precedence in observers. For example, when affective reaction takes place, one person's expressed positive emotions (such as happiness or excitement) may enhance contributions by the other party by spreading positive feelings and energy. A pair of happy coworkers working together may exchange more creative ideas flowing from their more flexible and optimistic mindsets (Isen, 1999; Fredrickson, 1998). Via affective reactions, however, expressed negative emotions (such as anger or frustration) may block creative responses by triggering similar negative feelings in observers. For instance, Miron-Spektor Efrat-Treister, Rafaeli, and Schwarz-Cohen (2011) found laboratory evidence that

exposure to angry expressions produced more rigid and less creative thinking in observers. Expressions of negative emotions such as anger may even fuel reciprocal aggressive feelings in observers, triggering retaliatory reactions against the expresser rather than collaborative effort (e.g., Lelieveld, Van Dijk, Van Beest, & Van Kleef, 2012; Wubben, De Cremer, & Van Dijk, 2009).

When the more complex and thoughtful inferential process takes place, the effects of positive and negative emotions on interaction partners may be reversed. One party's expression of positive emotions might be interpreted by an interaction partner as signaling that the current solution is satisfactory, and that additional effort toward a more creative solution is not needed (George & Zhou, 2002; Martin & Stoner, 1996). Expression of positive emotions may therefore discourage further creative endeavors in a work dyad. In contrast, inferentially processed negative emotions might play a role in motivating greater creative efforts from observers. For example, experimental evidence by Van Kleef et al. (2010) shows that individuals with greater information processing motivation demonstrated more creative responses (via enhanced engagement) after receiving angry rather than neutral feedback. In this sense, negative expressions that convey dissatisfaction with and insufficiency of the current solution to interaction partners may boost the partner's creative effort, but only for those who consider the cues deliberately (Van Kleef et al., 2010).

Similar to what the person level research suggests, the small literature on creativity at the dyadic level implicates less straightforward relationships of positive and negative emotions and creativity in dyads. An expressed feeling may either stimulate or discourage creative responses from an interaction partner, depending on what the emotion is and whether the partner directly catches the emotion or engages in inferential processing. While affective contagion may produce similar or consistent feelings between a pair of coworkers, the

inferential process may produce dissimilar but potentially complementary feelings and cognitions in a dyad.

We have established that both positive and negative activating affect can facilitate creativity via flexibility or systematic processing routes, respectively. Individuals can only benefit from one of the dual processes at a time since they experience only one mood valence at a time. However, in a dyad there is the possibility that the interaction partner may provide the cognitive resources of the other mood valence, allowing the simultaneous action of both processes. We suggest that in some cases this will be useful, while in others, affective (dis)similarity may be harmful to creativity. Effects may depend on both mood and stage in the creative process. For example, in the first stage of identifying and defining the problem, shared negative moods and the persistent analytical processing they bring may assist in becoming aware of a problem situation and carefully analyzing its nature. In the second stage of developing new ideas and alternative solutions, a team member may seek out a colleague known to be flexible and optimistic to help generate initial ideas. Feelings of optimism and excitement shared by coworkers may reinforce each other's creative attempts as they build on each other's thoughts and ideas. This has been referred to as the "cognitive stimulation dividend" in multi-party brain-storming (Paulus & Dzindolet, 2008). However, the dividend is often not realized. One reason for this might be dissimilarity in mood, if the partner in a negative mood engages in critical evaluation which discourages the production of new ideas by the partner initially in a more positive mood. In the last stage of evaluating ideas, an individual who is excited about a creative solution may seek out an interaction partner known to be more critical or pessimistic for a reality check. At this stage, different feelings in the dyadic interaction may be helpful in producing thoughtful discussions and evaluations of ideas.

Group Level

Researchers have also begun to look at how group mood may influence collective creative processes at the team level (see Barsade & Knight, 2015 for a review; e.g., Jones & Kelly, 2009; Tsai, Chi, Grandey, & Fung, 2012). To date, group affect research has largely been guided by the *affective convergence perspective*, presuming that affect must be shared in a group for its effects to occur (Barsade & Knight, 2015). Below we firstly review this research, and then move to discuss an emerging perspective on affect diversity and team creativity. Adding complexity to the phenomenon observed at the dyadic level, diverse feelings in teams can take place in varied combinations or patterns, and the effects of these patterns on team creativity may also be subject to the stage of the creative process.

In the affect convergence view, individual positive or negative affective experiences can be shared or held in common with teammates, and emerge to form a group-level construct called *group affective tone* (George, 1990). Shared state group affect may be the product of members being exposed to similar stimuli or as a result of mutual affective influence or emotional contagion (George, 1990; Klep, Wisse, & Van der Flier, 2011). Shared trait group affective tone may also occur as a result of attraction-selection-attrition processes resulting in groups with members who are relatively homogeneous on trait positive or negative affectivity.

At the group level, research has produced mixed results regarding whether positive or negative group affective tone facilitates team creativity. The initial expectation was that positive group affective tone would lead to greater team creativity; mirroring the relatively robust effects of positive moods on individual creativity. There is some evidence to support this view, for instance Grawitch and colleagues (Grawitch, Munz, Elliott, & Mathis, 2003; Grawitch, Munz, & Kramer, 2003) report laboratory evidence that groups whose members were induced to feel positive demonstrated greater creativity on their tasks. They reasoned

that positive affect broadened thought action repertoires and enhanced cognitive flexibility, helping teams be more effective in building upon and following up each other's ideas and suggestions. Intervening mechanisms at group level may include greater motivation to contribute, greater information sharing, and improved task elaboration (Paulus & Dzindolet, 2008). Klep et al. (2011) found evidence that shared positive affect in a group resulted in a higher frequency of objectively coded statements related to team belongingness and also greater information sharing behavior among team members. Shin (2014) found that positive group affect predicted team creativity via team reflexivity and team promotion focus. A pleasant affective tone and the supportive, inclusive climate it breeds (Knight & Eisenkraft, 2015; Li, Lin, Tien, & Chen, 2015; Paulus & Dzindolet, 2008) may encourage members to contribute ideas and subsequently gain acceptance and positive feedback, thus maintaining motivation and engagement. In sum, several studies have shown that group positive mood is positively related to group creativity. However, this may not always be the case.

Tsai et al. (2012) were unable to replicate this effect in a field study of group affective tone and creativity in intact R&D teams. Happier teams were not consistently more creative in their study. Other scholars such as George and King (2007) agree that positive group mood does not always foster and may even hinder team creativity. They suggest that members sharing positive affective tone will experience a pleasant, harmonious atmosphere, which might inhibit the expression of opposing opinions that could jeopardize the pleasant norm and alienate teammates (Wegener & Petty, 1994). George and King (2007) suggest that shared positive group affect might encourage groupthink, conformity to mainstream thinking, and the suppression of minority or unpopular views (see also Kruglanski, Peirro, Mannetti, & De Grada, 2006). Feeling positively about the team's current situation, team members may also adopt a less discerning mindset and rely on pre-existing understandings or schema. The individual experience of positive feelings may be magnified by shared positive group

affective tone in teams, thus leading to a uniform and uncritical interpretation of the problem, environment, and proposed solutions (George & King, 2007). Positive group affective tone may thus be detrimental to the creative processes in teams.

There are also inconsistent research findings about the effects of negative group affective tone on team creativity. Kelly and Spoor (2007) and Jones and Kelly (2009) suggest that negative group mood might in certain conditions serve to promote creativity in groups. They argue that shared negative feelings (suggesting a problematic or dissatisfactory status quo) may prompt group members to continue searching for better solutions rather than settling for an inferior solution. As Jones and Kelly (2009) note, the persistence motivated by negative mood may be more helpful to groups than to individuals because of the more abundant resources and synergistic effects of groups. They found laboratory evidence that when negative affect was induced, groups performed more creatively than did individuals on an idea generation task; this group synergy effect did not occur in groups primed with positive affect. Overall, results of their research support the idea that negative group mood can sometimes enhance team creativity via the persistence path.

Nevertheless, there is also evidence that negative group affective tone may hinder team functioning. For example, Cole, Walter, and Bruch (2008) conducted a field study of sixty-one work teams and found that negative group affective tone mediated the link between dysfunctional team behavior and team performance, especially in the condition of high negative affective expressivity. Negative shared group mood may be counterproductive by escalating interpersonal tension or conflict, which may undermine a group's effectiveness in completing its goals (Kelly & Spoor, 2007). The resulting team disintegration may limit perspective taking and processing of new information and lead to hostile rejection of ideas from other members and block communication, information exchange, and cooperation. If this were to occur, team creativity would be likely to decline.

Moving away from shared group affect, scholars such as Barsade and Knight (2015) and Collins, Lawrence, Troth & Jordan (2013) have called for research on the neglected phenomenon of affect diversity in teams. The small literature on affect diversity has focused on differences in the stable affective traits of members (Barsade, Ward, Turner & Sonnenfeld, 2000; Kaplan, LaPort & Waller, 2013). Given the fluctuating nature of emotions, it is also useful to explore shorter-lived differences in state affect experienced in teams over time. Affect diversity can be conceived and measured at the meeting or day level for teams that work together regularly over a period of time. Teams may vary in affect diversity from occasion to occasion due to the emotions that members bring to the team from their outside lives, or based on their different perceptions of team process or progress.

Initial evidence suggests that diversity in trait affect (such as positive affectivity) hinders team cooperativeness and effectiveness. This detrimental effect may be explained in terms of the "similarity-and-attraction" perspective that people prefer to work with others who share similar attributes with themselves (Barsade & Knight, 2015). Group functioning might be thus hindered by members' affective dissimilarity and the resultant interpersonal strain (Barsade, et al. 2000). On the other hand, and as Barsade and Knight (2015) and George and King (2007) noted, mixed feelings might also be beneficial to team creativity by supporting asymmetric or complementary information processing styles among team members.

A dynamic approach to studying affect and creativity in teams may help illuminate the creative benefit (or cost) of team member affect diversity. Based on Harrison and Klein's (2007) team diversity typology, affect dissimilarity in teams as a whole may occur in a variety of patterns. Specifically, mixed feelings in a team may be characterized by a split between two distinct subgroups with different or opposite feelings (*separation*), by a multiplicity of varied feelings held by different members (*variety*), or by a *disparity* in which

one or a small minority of team members have a unique feeling that is different from the feeling shared by the majority (Harrison & Klein, 2007).

The three types of affect diversity may have different implications for team creativity across stages of the creative process. It is plausible that when *separated* feelings occur between two distinct subgroups, the root cause may be a dormant faultline preexisting in the team. Experiencing such an affective split may activate the faultline and thus trigger or intensify group disintegration and block team collaboration (Thatcher & Patel, 2012). Unless a team norm or mechanism is strong enough to override the affective spit, team creative processes are likely to be harmed regardless of whether the team is in the problem recognition, idea generation, or evaluation stage of the creative process. Stalemate may be reached with regard to agreeing a solution to the current problem. In the worst case, the conflict may spill over to other team episodes and tasks, leading to a lasting breakdown in team effectiveness.

On the other hand, a *variety* of feelings in a team may not prime team members to take sides based on their (social) categories. The diverse perspectives and thinking modes tuned by their varied feelings might be conducive to success in the first two stages of problem recognition/definition and idea generation. Affect variety in these stages may assure that problems are thoroughly analyzed from multiple perspectives and that a range of divergent solutions are suggested. However, somewhat (but not completely) homogeneous feelings might be more helpful in the later stage of evaluation and implementation when a solution must be agreed (Knight, 2015). Affect *disparity*, in which a minority dissents from majority feelings, may help to trigger counterfactual thinking or re-examination of preexisting assumptions if the minority's unique feelings and their signals are noticed and appreciated by other team members. Research on minority influence in teams verifies that minority dissent can trigger systematic processing and increase creativity in both minority and majority

factions (De Dreu, Nijstad, Baas, & Bechtoldt, 2008). Minority dissent may be especially useful in preventing groupthink at the evaluation stage. Affect disparity, however, might also be taken as inappropriate behavior that should be suppressed, and favourable effects of disparity are more likely to appear when the team shares pro-social and/or epistemic motivation (De Dreu, Nijstad et al. 2008; De Dreu & West, 2001).

Summary

Affect and creativity in organizations are inherently multilevel phenomena. While recent research has broadened attention beyond the individual level to interpersonal levels such as dyads and teams, the current literature is small and offers mixed findings. As we reviewed above, and consistent with the meta-analysis by Baas et al. (2008), affect valance and activation seem useful but perhaps incomplete in explaining the complex effects of affect on creativity. To produce a more nuanced understanding of these effects across levels, we explore affect in terms of regulatory focus. In the following sections, we draw on Higgins' (2000) *Regulatory Focus Theory* to explain why regulatory promotion and prevention focus (and their combined effects) provide a useful framework to untangle the complexity.

An Integrative Regulatory Focus Perspective

Higgins' (2000) *Regulatory Focus Theory* proposes promotion focus and prevention focus as two distinct regulatory orientations (see Lanaj, Chang, & Johnson, 2012 for a meta-analysis). A promotion focus emphasizes gains, advancements, and ideals (hopes, aspirations, ambitions) whereas a prevention focus is concerned with safety, security, and oughts (duties, responsibilities, obligations). Regulatory focus sensitizes people to specific kinds of information, appraisals, and emotional experiences (Lanaj et al., 2012). A promotion focus sensitizes individuals to the presence and absence of positive outcomes (gains and non-gains), which corresponds to feelings ranging from cheerfulness (e.g., "excitement") in the case of gains, to dejection (e.g., "frustration") in the case of non-gains. A prevention focus

produces sensitivity to the absence or presence of negative outcomes (non-losses and losses), which elicits feelings ranging from quiescence (e.g., "relief" in the case of non-losses) to agitation (e.g., "anxiety" in the case of losses). Regulatory focus is sometimes treated as a stable individual difference, but also varies as a transient *state* induced by the current task and setting. People's promotion and prevention foci are sensitive to events and situational cues that shape their state regulatory orientations and associated cognitive and emotional experiences (Higgins, 2000). Because our topic is affect, we will adopt this state perspective on regulatory focus. Although individuals may experience both promotion and prevention states over time, typically only one focus dominates their experience at a single point in time (Higgins, 2000).

We argue that conceiving affective states in terms of regulatory focus can add to the understanding of the complicated affect-creativity links across levels and stages of the creative process (Baas et al., 2008; Baas, De Dreu & Nijstad, 2011). Specifically, and as discussed above, dual process accounts of the effects of affect on creativity largely address the effects of positive and negative moods, which are often general or do not have a clear target. Such 'fuzziness' may leave their motivational implications for creativity open to people's interpretation of the affective cues (Martin, Ward, Achee & Wyer, 1993). For example, the pleasant signals flowing from a positive mood may inform one that 'the environment is problem free so it is safe to try something new' or alternatively 'the environment is problem free so further creative effort is not needed' (Martin et al., 1993; George & Zhou, 2002). Similarly, the problem signals elicited by a negative mood may motivate an individual to seek improvement persistently if coping expectancy is high, or lead them to withdraw if coping is not expected to be successful (Martin et al., 1993; George & Zhou, 2002).

Regulatory focus theory directs attention to more specific feelings which characterize a promotion or prevention focus towards a more current target – probably something to do with the immediate task (Fisher & Ashkanasy, 2000; Seo et al., 2004). Emotional states from this more concrete and relevant source should be more action-oriented and likely to directly influence behavior toward the tasks than affect from more general or diffuse sources. Thus, promotion-focused affect should tune the same flexible cognitive style as activating positive moods, with even more intense motivation due to the presence of potential gains and positive expectancies of success (Baas et al., 2008; Friedman & Förster, 2001; Lanaj et al., 2012). Prevention-focused affect seem likely to trigger a cautious, critical, and persistent approach to avoiding losses, similar to what is observed in the case of activating negative affect but probably stronger due to the avoidance motivation of preventing failure on the current task (Higgins, 2000).

An additional reason to explore regulatory focus as an antecedent of creativity is that we know how to manipulate it in a way that makes sense in a work environment (e.g. with task instructions, see Friedman & Förster, 2010). We also know how to manipulate mood, but often in a way that is not task related, and that may have only a short-term impact (Westermann, Spies, Stahl, & Hesse, 1996). This means that addressing the regulatory focus of individuals, dyad, or groups working on a creativity task may provide a lever to enhance creativity in ways that focusing on general mood does not.

Taken together, regulatory focus affects and the task-based energies that accompany them should produce more consistent effects on individual and collective creativity than exogenous, diffuse moods, though both may act to tune similar cognitive styles. For creative processes to succeed, both promotion and prevention motivations may be helpful. As the meta-analysis by Lanaj et al. (2012) suggests, “Perhaps the optimal situation is one where the

motivation to pursue a desired end-state (which coincides with a strong promotion focus) is paired with the motivation to avoid errors (which coincides with a strong prevention focus), thereby creating complementary push and pull forces that facilitate task performance" (pp. 1018). Below we suggest that promotion-focused affect, prevention-focused affect, and especially their interaction, might help predict creativity at the individual, dyadic, and team levels. Further, we propose that effects of regulatory focus affect (and their mixtures) on creativity at the different levels may vary across the stages of the creative process.

Promotion and Prevention Focused Emotions and Individual Creativity

Promotion-focused and prevention-focused affect may influence momentary creativity via different paths (see also Baas et al., 2008; 2011; Roskes, De Dreu & Nijstad, 2012). As Baas et al. (2008) suggest, affective states that are associated with promotion focus (e.g., excited, angry) are activating and engaging in the search for gains, and engender expanded and global attentional scope of thought that fosters cognitive flexibility and generation of new ideas (Baas et al., 2008; Friedman & Förster, 2010; Zhou, Wang, Song, & Wu, 2017). Prevention-focused affect (especially with unfulfilled or threatened goals, e.g., anxious, worried) may motivate persistent efforts to avoid losses or pitfalls by probing deeper and seeking feasible solutions to the problem at hand (Baas et al., 2011; Herman, Reiter-Palmon, Smith, Smith, & Kaufman, 2011; Roskes et al., 2012). This persistence path may not result in creative solutions immediately, but these processes entail more critical and thorough evaluation of information or materials that may eventually yield high-quality solutions and practical insights (Nijstad et al., 2010).

Moving away from the predominating idea that creativity is better achieved by approach motivation, recent laboratory evidence indicates that avoidance motivation can also increase effort toward generating creative solutions (Baas et al., 2011; Roskes et al., 2012). Creativity requires both an approach orientation for novelty seeking and an avoidance

orientation for preventing the adoption of infeasible or unrealistic ideas (Roskes, 2015; George, 2011). Thus, it is possible that a person who experiences a blend of promotion-focused and prevention-focused affect over time would benefit from the presence of both regulatory orientations. Either focus may be helpful in the problem identification stage, though those in a promotion focus may define problems as challenges for improvement (gains) while those in a prevention focus may define problems as threats of potential loss if nothing is done. In either case, the remedy is to seek a creative solution. Promotion-focused affect may facilitate idea generation and the search for novel solutions, while prevention-focused affect may prompt persistent, systematic evaluation of those ideas, and thus facilitate selection and adoption of realistic and useful ideas (Baas et al., 2008; 2011; Herman et al., 2011; Roskes, 2015). The presence of high promotion/approach motivation alone may lead to an overload of scattered and diverse ideas of highly varied quality. The presence of prevention motivation alone, and the persistence and worry which accompany it, may be depleting and lead to overestimation of the risks involved in trying something new (Roskes et al., 2012). Therefore, the interaction of prevention- and promotion-focused affect over time may add to the independent effects of each state in predicting the creativity of individuals.

Consistent with the affective shift perspective (Bledow et al., 2011; 2013), we suggest that successful creative episodes may be facilitated by the sequential shift of promotion-focused and prevention-focused states and their associated thinking styles and energy. Differing from Bledow's work, however, we argue that both a shift from promotion-focused affect to prevention-focused affect or *vice versa* can facilitate individual creativity, subject to creative stage. It will be useful to investigate what constitutes the 'right mixture' of promotion-focused and prevention-focused affect to supply the best balance of creative resources and tendencies over the course of an episode of creative striving.

As Higgins (2000) suggests, individuals experience *regulatory fit* when they engage in goal pursuit in a manner that fits (sustains) their regulatory focus as primed by the situation and/or individual tendency. For instance, in the idea generation stage, individuals primed with a promotion focus may experience motivational fit when they engage in the task in an eager manner (feeling cheerful trying out new ideas for gains; feeling angry and tackling a frustrating issue to produce a gain). In the later creative stage of idea evaluation, individuals primed with a prevention focus may experience regulatory fit when they engage in the task in a vigilant manner (feeling alert to potential losses or worried about avoiding a bad decision). As an impressive body of laboratory evidence shows (see Higgins, 2000 for a review), regulatory fit makes individuals feel 'right' about their goal pursuits and thus enhances task engagement (Avnet & Higgins, 2006; Forster, Higgins, & Idson, 1998) as well as social engagement such as collaborative and discretionary behavior toward others (e.g., De Cremer, Mayer, van Dijke, Schouten, & Bardes, 2009; Hamstra, Sassenberg, Van Yperen, Wisse, & Rietzschel, 2015).

In this view, approach tendencies should be fully activated by promotion-focused opportunities for gain. In a creative stage requiring more exploratory activities, the experience of promotion-focused affect may provide the overall motivational fit for new attempts that produce 'Aha!' moments of insight. On the other hand, occasional experiences of prevention-focused affect (regulatory non-fit) might also be beneficial by triggering a re-examination of initial judgments and potential oversights that could lead to impractical or unrealistic ideas. Recent work by Fridman, Scherr, Glare and Higgins (2016) demonstrates that regulatory non-fit de-intensifies individuals' initial attitudes by lowering their confidence in their initial judgments and motivating them to consider an initially disliked option more thoroughly. Thus, in the idea generation stage, a mixture of frequent promotion-focused

affect and occasional prevention-focused affect may be most beneficial for creativity. Similarly, in the evaluation stage, prevention-focused affect may offer the overall regulatory fit to engage more persistently and thoughtfully in choosing the right solution for an important but unfulfilled goal. However, occasional experiences of promotion-focused affect might provide moments of optimism about likely gains and raise expectancies of successful implementation.

Research Proposition 1: At the person level, a mixture of promotion-focused affect and prevention-focused affect over time benefits creativity beyond the independent effects of the two states. The optimal mixture of the two momentary states depends on creative stage.

Promotion and Prevention Focus Effects on Dyadic Level Creativity

Regulatory focus may also help to explain how affective states influence interpersonal creative behavior in dyads embedded in teams. Individuals are unlikely to experience both promotion- and prevention-focused affect and the cognitive and motivational tendencies they produce at a single point in time. The addition of a dyad partner may assist creative processes, consistent with the classic homily, "two heads are better than one." The selection of a partner who is experiencing (or catches) the right regulatory focus and affect and hence thinking style may intensify the benefit of that style if applied at the appropriate stage of the creative process. Specifically, two promotion focused thinkers may produce a greater number of innovative ideas than one during the idea generation stage where the partners might better appreciate and build on the alternative viewpoints or information each provides. However, experiencing similar promotion-focused feelings during the evaluative stage may produce overly optimistic estimates of the feasibility or likelihood of success of novel ideas. At this stage, the selection of a partner who is experiencing the opposite prevention-focused affect and thinking modes may be helpful, as careful and critical thinking is needed to rein in

infeasible ideas. It would be interesting to investigate whether our speculation is correct about what comprises the best mix of regulatory foci between partners at various stages of the creative process.

Research on interpersonal complementarity suggests that dyads with complementary interpersonal styles tend to yield more positive interpersonal outcomes than pairs without, so long as overall goals are shared (Bohns et al., 2013; Kiesler, 1983). Thus, it might be possible that promotion-focused affect (expressed by a highly approach-oriented coworker) might best be paired with complementary prevention-focused affect in a partner high on avoidance motivation. The mixed emotions in terms of regulatory focus between the pairs may facilitate their joint effort toward solving problems, especially in the last stage where evaluation of novel ideas is needed. However, this prediction may compete with the very well-known similarity-attraction tendency in dyadic relationships (e.g. Montoya, Horton, & Kirchner, 2008). It would be interesting to investigate the reasons individuals give for choosing a particular partner with whom to discuss their ideas at various creative stages– do they seek similarity in affect and regulatory style, or diversity?

> *Research Proposition 2*: In dyads, a mixture of promotion-focused affect and prevention-focused affect between two coworkers may enhance their joint creativity. What makes the right mixture of the interpersonal affect is subject to the creative stages and the complementarily of the regulatory motivations between the partners.

Group Level

Moving away from the idea of homogeneous group affective tone, affect diversity in teams may also have important effects on creativity, as described above. In this regard, the regulatory focus perspective offers additional insights into how the different motivational

orientations provided by promotion-focused and prevention-focused affect may come together to improve team creativity. For instance, in regular team meetings, it is possible that the simultaneous existence of promotion-focused affect and prevention-focused affect from different members may benefit creative processes. Individuals experiencing promotion-focused affect may suggest more novel ideas facilitated by their optimistic, flexible, and gain-seeking thinking modes, whereas individuals experiencing prevention-focused affect may raise concerns about the feasibility and usefulness of the ideas facilitated by their more discerning, loss-avoidance style (Baas et al., 2008; 2011).

Consistent with the ideas in the propositions above, stage in the creative process is expected to be an important moderating variable (Knight, 2015; Lubart, 2001; To, Tse et al., 2015). In the middle stage where exploratory activities are needed, having most team members experiencing promotion-focused affect (and one or a minority experiencing prevention states) might increase the team's overall effectiveness in generating new and realistic ideas. If promotion-focused affect is unanimously shared in the team, members might tend to reinforce each other's optimistic judgements and experience automatic trust, pride, and a false sense of certainty (George & King, 2007). This may undermine the team's vigilance against poor ideas or untested assumptions. The prevention-focused affect expressed by minority members (if noticed and valued by other team members) might serve to prevent groupthink while maintaining the team's alertness for potential problems. In the later stage of idea evaluation, having more of the team experiencing prevention-focused affect (together with one or a minority in promotion states) might facilitate critical thinking and the testing of ideas leading to the delivery of workable creative solutions. Unanimous prevention-focused affect shared within a team might reinforce each other's vigilance against loss, thereby producing unnecessary criticism or worries. If a minority of members express promotion-focused affect (if accepted by other team members), this might maintain a team's

optimism about eventual gain and success, which may supply energy for the implementation of the chosen solution.

However, minority affective influences may not always be functional for teams (De Dreu, Nijstad et al., 2008). The regulatory fit between one's expressed emotions and roles in the team may be an important consideration for minority influence to occur. For example, it is possible that prevention-focused feelings (and associated critical signals) expressed by a member - who is recognized as frequently prevention oriented and/or assigned a team role of this sort - may be taken by others as more legitimate expressions. Similarly, promotion-focused feelings (and associated approach and optimistic tendencies) expressed by a member - who is recognized or assigned a team role of this sort - may be more welcomed by others. Alternatively, it could be possible that the expression of uncharacteristic emotions from a member (e.g. excitement expressed by a prevention focused member, cautious withdrawal by a promotion focused member) may be unusual and thus regarded as highly informative to others. These rare or regulatory non-fit expressions might be most informative in experienced teams in which members which have already developed understanding of each other's regulatory focus tendencies and the team's inter-role structure, so that the expression of unexpected emotions from a member triggers others' counterfactual thinking. During the middle phase of any given creative endeavor, the team might still have time and resources to change course and pursue better alternatives if prompted to do so by such unexpected behavior (Farh, Lee & Farh, 2010). It would be useful to explore these speculations about when and how minority affective influences best benefit team creativity. Thus:

> *Research Proposition 3:* In teams, a mixture of promotion-focused affect and prevention-focused affect among members can foster team creativity. The right mixture of regulatory focus affect among team members may rely on the stage in the creative process and team roles.

Conclusion

In this chapter, we considered affective influences on creativity at the individual, dyadic, and group levels. Increasing research evidence (e.g., Baas, et al., 2008; 2011; Roskes et al., 2012) has suggested that conceiving affective experiences in terms of regulatory focus (in addition to the valance and activation dimensions of more diffuse moods) can add to the understanding of the complicated effects of affect on creativity in individuals, dyads, and teams. Contributing to this emerging view, we argue that a more nuanced understanding of the affect-creativity nexus can be achieved by considering the separate and combined effects of promotion-focused and prevention-focused affect. At the core of our arguments, we recognize that the 'right mixture' of regulatory focus affect may offer vital cognitive and motivational resources for creativity at all three levels.

Affect research has stressed the dichotomous nature of affective experiences (e.g., positive/negative, activating/deactivating, or promotion-/prevention-focused) and their effects on motivation and behavior. Moving away from this approach (see also George & King, 2007; Rothman & Melwani, 2016), our perspective emphasizes the unique role played by mixed feelings which involve the sequential presence of both types of affective experience for individuals, and the simultaneous presence of both types of affective experience in dyads and teams. We suggest that regulatory focus theory, which links more specific affective states to particular action tendencies, offers a useful perspective on the diverse and somewhat piecemeal literatures.

We raise interesting questions for future research at each of the levels. At the person level, for example, mixed feelings can occur in succession (Rothman & Melwani, 2016), such as shifting from a prevention-focused affect (worried) to a promotion-focused affect (excited), or *vice versa*. In dyads, experiencing the same moods or emotions as the

interaction partner may intensify the cognitive effects of those states, which may or may not be beneficial for creativity. When mixed feelings occur simultaneously, they may contribute to dysfunctional conflict or alternatively work in a complementary fashion by providing the dyad with access to both thinking styles. Such complementarily in interpersonal affect might trigger creative interactions to solve the problem facing the dyad, which may in turn protect or improve the quality of their future exchange relationship. It will be interesting for scholars to investigate the moderators that might facilitate or dampen creativity in the case of homogeneity versus complementarity of regulatory focus affect at different stages of the creative process. It will be also be instructive to determine whether individuals seek out interaction partners who are experiencing similar or different moods or regulatory foci to their own.

Finally, mixed feelings in teams may occur in different patterns - the potentially polarizing form of *separation* between two distinct subgroups, widespread *variety* across the group, or *disparity* which opens the door to minority influence effects. Such affect diversity in teams may help or hinder team interactions, and it is important for future research to identify the factors which help teams effective translate their mixed feelings into team creativity. Taken together, across levels, it seems likely that positive, negative, promotion, prevention, and mixed feelings may all contribute to creativity under different circumstances.

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